Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-97 (Canceled).

Claim 98 (Currently Amended): Drill (4) with a drill head (5) with a diameter D (51), in which the drill head (5) on a drill tip (13) has only one cutting edge (52) extending over part of the diameter D (51), and with a lateral, V-shaped chip removing groove or bead (59) and with a channel (12) with an outlet opening (56) in the drill head (5) for supplying a drill fluid (9), wherein on a drill side (61) of the drill head (5) facing away from the bead (59) between a first and a second cylinder casing part surface (64, 65) of the drill head (5) there is a rear offset (63) reducing the cross section of the drill head (5) relative to an enclosing cylinder casing surface (62) of the drill head (5), whereby the rear offset (63) is designed to have an at least approximately even surface and is arranged in an end section (74) of the drill head (5) facing the drill tip (13), and extends in axial direction, and whereby a normal to the

surface (67) of the rear offset (63) with an angle halving end (68) of the bead (59) encloses an angle (69), whereby said angle (69) has a value from a range of - 50° to +50°, wherein a second outlet opening (76) is arranged in a surface area (77) of the drill head (5) formed by the rear offset (63).

Claim 99 (Previously Presented): Drill according to claim 98, wherein a ratio of the length of the drill head (5) to its diameter D (51) has a value from a range of 0.5 to 10.

Claim 100 (Previously Presented): Drill according to claim 99, wherein the ratio of the length of the drill head (5) to its diameter D (51) has a value from a range of 1 to 4.

Claim 101 (Previously Presented): Drill according to claim 98, wherein the angle (69) has a value from a range of from - 30° to + 30°.

Claim 102 (Previously Presented): Drill according to claim 98, wherein the rear offset (63) has a width (70), whereby the ratio of the diameter D (51) and the width (70) has a value from a range of 0.1 to 0.8.

Claim 103 (Previously Presented): Drill according to claim 98, wherein the rear offset (63) runs continuously in the direction of the drill tip (13).

Claim 104 (Previously Presented): Drill according to claim 98, wherein the rear offset (63) is aligned parallel in relation to a drill axis (27) of the drill head (5).

Claim 105 (Previously Presented): Drill according to claim 98, wherein two or more rear offsets (63) are formed spaced apart from one another by interlying cylinder casing part surfaces (64, 65).

Claim 106 (Previously Presented): Drill according to claim 98, wherein the drill head (5) is designed to have a cutting edge (52) with a first cutting edge section (53) and with a second cutting edge section (54), whereby the first cutting edge section (53) faces a drill axis (27) of the drill head (5) and the second cutting edge section (54) faces away from the drill axis (27) of the drill head (5), and the first cutting edge section (53) with the drill axis (27) encloses a first cutting edge angle (71) of at least 70°.

Claim 107 (Previously Presented): Drill according to claim 106, wherein the first cutting edge angle (71) is at least 80°.

Claim 108 (Previously Presented): Drill according to claim 106, wherein the second cutting edge section (54) with the drill axis (27) encloses a second cutting edge angle (71), whereby the second cutting edge angle (71) has a value from a range of 20° to 90°.

Claim 109 (Previously Presented): Drill according to claim 108, wherein the second cutting edge angle (71) has a value from a range of 35° to 80°.

Claim 110 (Previously Presented): Drill according to claim 106, wherein a cutting edge tip (55) formed by the two cutting edge sections (53, 54) has a minimal edge distance (73) relative to an enclosing cylinder casing surface (62) of the drill head (5), which has a value from a range of 1/10 to 1/3 of diameter D (51).

Claim 111 (Currently Amended): Drill according to ~~clam~~ claim 110, wherein the edge distance (73) has a value from a range of 1/5 to 1/4 of the diameter D (51).

Claim 112 (Previously Presented): Drill according to claim 106, wherein an end region (74) of the second cutting edge section (54) facing away from the drill axis (27) of the drill head (5) or the cutting edge tip (55) is designed to be rounded towards the enclosing cylinder casing surface (62) of the drill head (5).

Claim 113 (Previously Presented): Drill according to claim 112, wherein the end region (74) of the second cutting edge section (54) facing away from the cutting edge tip (55) has a radius of curvature (75) of up to ½ the diameter D (51).

Claim 114 (Previously Presented): Drill according to claim 98, wherein the diameter D (51) of the drill head (5) has a value from a range of 3 mm to 40 mm.

Claim 115 (Previously Presented): Drill according to claim 98, wherein the diameter D (51) of the drill head (5) has a value from a range of 4 mm to 20 mm.

Claim 116 (Canceled).

Claim 117 (Currently Amended): Drill according to claim ~~116~~ 98, wherein an opening axis (58) of the second outlet opening (76) is inclined in relation to the normal to the surface (67) of the rear offset (63).

Claim 118 (Previously Presented): Drill according to claim 117, wherein an angle of inclination (79) of the opening axis (58) relative to the normal to surface (67) of the rear offset (63) has a value from a range of 0° to 80°.

Claim 119 (Previously Presented): Drill according to claim 117, wherein the angle of inclination (79) of the opening axis (58) has a value from a range of 30° to 60°.

Claim 120 (Previously Presented): Drill according to claim 119, wherein the second outlet opening (76) is in an area of the drill head (5) closer to the drill tip (13) and a further outlet opening (56) is arranged in a surface area (77) of the drill head (5) formed by the bead (59), whereby said further outlet opening (56) lies in a region of the drill head (5) positioned further away from the drill tip (13).

Claim 121 (Previously Presented): Drill according to claim 98, wherein on the drill side (61) of the drill head (5) facing away from the bead (59) or in the rear offset (63) a piezoelectric element (105) is arranged.

Claim 122 (Previously Presented): Drill according to claim 121, wherein the piezoelectric element (105) is designed to have a bearing side (109), whereby the bearing side (109) is designed to be in alignment with the enclosing cylinder casing surface (62) of the drill head (5).

Claim 123 (Previously Presented): Drill with a drill head (5) with a diameter D (51), in which the drill head (5) on a drill tip (13) has only one cutting edge (52) extending over part of the diameter D (51), and with a lateral, V-shaped chip removing groove or bead (59) and with a channel (12) with an outlet opening (56) in the drill head (5) for supplying a drill fluid (9), whereby on a drill side (61) of the drill head (5) facing away from the bead (59) between a first and a second cylinder casing part surface (64, 65) of the drill head (5) there is a rear offset (63) reducing the cross section of the drill head (5) relative to an enclosing cylinder casing surface (62) of

the drill head (5), wherein the drill head (5) has an element (110) emitting electromagnetic radiation.

Claim 124 (Previously Presented): Drill according to claim 123, wherein the element (110) emitting electromagnetic radiation is formed by a piece of a chemical element emitting gamma radiation.

Claim 125 (Currently Amended): Device (1) for drilling a borehole (2) in a workpiece (3) with a diameter D (51) of a drill (4) and a depth (35) of the borehole (2), whereby the ratio of the depth (35) to the diameter D (51) is greater than 100, with a drill spindle (7) and with a drill (4) comprising a drill head (5), a drill shaft (6) and a channel (12) for supplying a drill fluid (9) and with a drill fluid circuit (8) for the drill fluid (9), whereby the drill fluid circuit (8) comprises at least one pump (11) and a supply line (18) and with a rotary transfer (17) on the drill spindle (7) for supplying the drill fluid (9) into the channel (12) of the drill (4), wherein the ~~device (1) comprises a drill (4) according to claim 98~~ drill head (5) on a drill tip (13) has only one cutting edge (52) extending over part of the diameter D (51), wherein the drill (4) has a lateral, V-shaped chip removing groove or bead (59), wherein the channel

(12) has an outlet opening (56) in the drill head (5) for supplying the drill fluid (9), wherein on a drill side (61) of the drill head (5) facing away from the bead (59) between a first and a second cylinder casing part surface (64, 65) of the drill head (5) there is a rear offset (63) reducing the cross section of the drill head (5) relative to an enclosing cylinder casing surface (62) of the drill head (5), whereby the rear offset (63) is designed to have an at least approximately even surface and is arranged in an end section (74) of the drill head (5) facing the drill tip (13), and extends in axial direction, and whereby a normal to the surface (67) of the rear offset (63) with an angle halving end (68) of the bead (59) encloses an angle (69), whereby said angle (69) has a value from a range of - 50° to +50°, wherein a second outlet opening (76) is arranged in a surface area (77) of the drill head (5) formed by the rear offset (63).

Claim 126 (Previously Presented): Device according to claim 125, wherein the drill fluid circuit (8) comprises a pulse line (25) with a valve (26), whereby the pulse line (25) branches off from the supply line (18) immediately prior to rotary transfer (17).

Claim 127 (Previously Presented): Device according to claim 126, wherein the valve (26) is in the form of a servovalve.

Claim 128 (Previously Presented): Device according to claim 125, wherein the drill fluid circuit (8) comprises a filter device with a coarse filter (15) and/or a fine filter (16) for the drill fluid (9).

Claim 129 (Previously Presented): Device according to claim 126, wherein at least the supply line (18) and/or the pulse line (25) of the drill fluid circuit (8) are formed by lines (106) with high resistance to radial and longitudinal extension.

Claim 130 (Previously Presented): Device according to claim 125, wherein the drill fluid circuit (8) is designed for drill fluid (9) pressure of in the region of up to 60 bar.

Claim 131 (Previously Presented): Device according to claim 130, wherein the drill fluid circuit (8) is designed for drill fluid (9) pressure of in the region of up to 160 bar.

Claim 132 (Previously Presented): Device according to claim 130, wherein the drill fluid circuit (8) is designed for drill fluid (9) pressure of in the region of up to 300 bar.

Claim 133 (Previously Presented): Device according to claim 130, wherein the drill fluid circuit (8) is designed for drill fluid (9) pressure of in the region of up to 600 bar.

Claim 134 (Previously Presented): Device according to claim 130, wherein the drill fluid circuit (8) is designed for drill fluid (9) pressure of in the region of up to 4,000 bar.

Claim 135 (Previously Presented): Device according to claim 130, wherein the drill fluid circuit (8) is designed for drill fluid (9) pressure of in the region of more than 4,000 bar.

Claim 136 (Currently Amended): Device according to claim 125, ~~wherein the latter comprises~~ further comprising a rotary sensor (28) for measuring the rotational speed or the angular speed of the drill (4) and the current position of a cutting edge (52) of the drill (4).

Claim 137 (Previously Presented): Device according to claim 125, wherein a measuring device (30) is provided for measuring the longitudinal dimension of the borehole (2).

Claim 138 (Previously Presented): Device according to claim 136, wherein it includes a control device (29), which is connected to the rotary sensor (28), the measuring device (30) and the valve (26).

Claim 139 (Previously Presented): Device according to claim 125, wherein the measuring device (30) comprises a measuring head support (34) for changing the spatial position and the alignment of a measuring head (31).

Claim 140 (Previously Presented): Device according to claim 139, wherein the measuring device (30) comprises a position measuring device for measuring the spatial position of the measuring head support and the measuring head (31).

Claim 141 (Previously Presented): Device according to claim 139, wherein on the measuring head support at least one ultrasound transmitter (36) and at least one ultrasound receiver (37) are arranged.

Claim 142 (Previously Presented): Device according to claim 141, wherein the ultrasound transmitter (36) and the ultrasound receiver (37) are arranged in a common ultrasound measuring head.

Claim 143 (Previously Presented): Device according to claim 139, wherein on the measuring head support (34) a radiation detector (108) is arranged for measuring electromagnetic radiation, and in the drill head (5) an element (110) emitting electromagnetic radiation is arranged.

Claim 144 (Previously Presented): Device according to claim 143, wherein the radiation detector (108) is designed at least for measuring the intensity of gamma radiation, and the element (110) is formed by a piece of a chemical element emitting gamma radiation.

Claim 145 (Currently Amended): Device according to claim 125, ~~wherein the latter comprises~~ further comprising a drill pipe (91) with a drill bush (94) and drill bush shaft (93), whereby in the drill bush (94) an eccentrically arranged drill guiding hole (95) is formed.

Claim 146 (Previously Presented): Device according to claim 145, wherein the drill guiding hole (95) is inclined relative to a longitudinal middle axis (96) of the drill bush (94).

Claim 147 (Previously Presented): Device according to claim 145, wherein an axis (97) of the drill guiding hole (95) and the longitudinal middle axis (96) of the drill bush (94) enclose an angle of inclination (79), the value of which is selected from a range of between 0° and 5°.

Claim 148 (Previously Presented): Device according to claim 147, wherein the angle of inclination (79) between the axis (97) of the drill guiding hole (95) and the longitudinal middle axis (6) of the drill bush (94) is selected from a range of between 0.5° and 1.5°.

Claim 149 (Currently Amended): Device for drilling a borehole (2) in a workpiece (3) with a diameter D (51) of a drill (4) and a depth (35) of the borehole (2), whereby the ~~ration~~ ratio of depth (35) to diameter D (51) is greater than 100, with a drill spindle (7) and a drill (4) comprising a drill head (5), a drill shaft (6) and a channel (12) for supplying drill fluid (9), and with a drill fluid circuit (8) for the drill fluid (9),

whereby the drill fluid circuit (8) comprises at least one pump (11) and a supply line (18) and with a rotary transfer (17) on the drill spindle (7) for supplying drill fluid (9) into the channel (12) of the drill (4), wherein the ~~device (1) comprises a~~ drill ~~(4) according to claim 121~~ head (5) on a drill tip (13) has only one cutting edge (52) extending over part of the diameter D (51), wherein the drill (4) has a lateral, V-shaped chip removing groove or bead (59), wherein the channel (12) has an outlet opening (56) in the drill head (5) for supplying the drill fluid (9), wherein on a drill side (61) of the drill head (5) facing away from the bead (59) between a first and a second cylinder casing part surface (64, 65) of the drill head (5) there is a rear offset (63) reducing the cross section of the drill head (5) relative to an enclosing cylinder casing surface (62) of the drill head (5), whereby the rear offset (63) is designed to have an at least approximately even surface and is arranged in an end section (74) of the drill head (5) facing the drill tip (13), and extends in axial direction, and whereby a normal to the surface (67) of the rear offset (63) with an angle halving end (68) of the bead (59) encloses an angle (69), whereby said angle (69) has a value from a range of - 50° to +50°, wherein on the drill side (61) of the drill head (5) facing away from the head (59) or in the rear offset (63) a piezoelectric element (105) is arranged.

Claim 150 (Currently Amended): Device according to claim 149, ~~wherein the latter comprises~~ further comprising a rotary sensor (28) for measuring the speed or the angular speed of the drill (4) and the current position of a cutting edge (52) of the drill (4).

Claim 151 (Previously Presented): Device according to claim 149, wherein a measuring device (30) is designed to measure the longitudinal dimension of the borehole (2).

Claim 152 (Previously Presented): Device according to claim 150, wherein it includes a control device (29), which is connected with the rotary sensor (28) and the measuring device (30).

Claim 153 (Previously Presented): Device according to claim 149, wherein the measuring device (30) comprises a measuring head support (34) for changing the spatial position and the alignment of a measuring head (31).

Claim 154 (Previously Presented): Device according to claim 153, wherein the measuring device (30) comprises a position measuring device for measuring the spatial position of the measuring head support (34) and the measuring head (31).

Claim 155 (Previously Presented): Device according to claim 153, wherein on the measuring head support (34) at least one ultrasound transmitter (36) and at least one ultrasound receiver (37) are arranged.

Claim 156 (Previously Presented): Device according to claim 155, wherein the ultrasound transmitter (36) and the ultrasound receiver (37) are arranged in a common ultrasound measuring head.

Claim 157 (Previously Presented): Device according to claim 153, wherein on the measuring head support (34) a radiation detector (108) is arranged for measuring electromagnetic radiation and in the drill head (5) an element (110) emitting electromagnetic radiation is arranged.

Claim 158 (Previously Presented): Device according to claim 157, wherein the radiation detector (108) is designed at least for measuring the intensity of gamma radiation and the element

(110) is formed by a piece of a chemical element emitting gamma radiation.

Claim 159 (Currently Amended): Device according to claim 149, ~~wherein the latter comprises~~ further comprising a drill pipe (91) with a drill bush (94) and drill bush shaft (93), whereby in the drill bush (94) an eccentrically arranged drill guiding hole (95) is formed.

Claim 160 (Previously Presented): Device according to claim 149, wherein the drill guiding hole (95) is aligned to be inclined relative to a longitudinal middle axis (96) of the drill bush (94).

Claim 161 (Previously Presented): Device according to claim 149, wherein an axis (97) of the drill guiding hole (95) and the longitudinal middle axis (96) of the drill bush (94) enclose an angle of inclination (79) which is selected from a range of between 0° and 5°.

Claim 162 (Previously Presented): Device according to claim 149, wherein the angle of inclination (79) between the axis of the drill guiding hole (5) and the longitudinal middle axis (96)

of the drill bush (94) is selected from a range of between 0.5° and 1.5°.

Claim 163 (Previously Presented): Method for drilling deep boreholes in workpieces (3) with a drill (4) with a drill head (5) in the shape of a single lip drill and with a lateral, V-shaped chip removing groove or bead (59) and with a channel (12) with an outlet opening (56) in the drill head (5) for supplying a drill fluid (9), wherein with the drill head (5) on a drill side (61) of the drill head (5) facing away from the bead (59) between a first and a second cylinder casing part surface (64, 65) of the drill head (5) a rear offset (63) is formed reducing the cross section of the drill head (5) in relation to an enclosing cylinder casing surface (62) of the drill head (5), and on the drill head (5) a radial force (19) is exerted acting periodically over a predeterminable rotational angular area, whereby the radial force (19) is generated by a pressure cushion which is formed by the drill fluid (9) located in the region of a volume formed by the rear offset (63) and a side wall of the borehole (2).

Claim 164 (Previously Presented): Method according to claim 163, wherein during the drilling process the longitudinal dimension of the borehole (2) is measured.

Claim 165 (Previously Presented): Method according to claim 164, wherein the longitudinal dimension of the borehole (2) is measured by means of ultrasound.

Claim 166 (Previously Presented): Method according to claim 164, wherein the longitudinal dimension of the borehole (2) is measured by means of electromagnetic radiation.

Claim 167 (Previously Presented): Method according to claim 166, wherein the longitudinal dimension of the borehole (2) is measured by means of a gamma radiation transmitter arranged on the drill head (5) of the drill (4).

Claim 168 (Previously Presented): Method according to claim 163, wherein from the values taken from measuring the longitudinal dimension of the borehole (2) the direction and the extent of the average deviation of the borehole (2) are calculated.

Claim 169 (Previously Presented): Method according to claim 163, wherein a measurement is taken of the speed or angular velocity and current position or alignment of a cutting edge (52) of the drill (4).

Claim 170 (Previously Presented): Method according to claim 169, wherein from the current position or alignment of the cutting edge (52) of the drill (4) and the direction and extent of the average deviation of the borehole (2) a time characteristic of the periodic change in radial force (19) is calculated.

Claim 171 (Previously Presented): Method according to claim 170, wherein the ratio of a frequency corresponding to the rotation of the drill (4) and a frequency of the time characteristic of the periodic change in the radial force (19) is an integer.

Claim 172 (Previously Presented): Method according to claim 171, wherein the frequency relating to the rotation of the drill (4) and the frequency of the time characteristic of the periodic change of radial force (19) are equal.

Claim 173 (Previously Presented): Method according to claim 163, wherein the drilling procedure using the drill (4) with diameter D (51) is interrupted and drilling is continued with a drill (92) with a diameter (99), which is smaller than diameter D (51) and which is guided in an eccentrically arranged drill guiding hole (95) of a drill pipe (91), whereby a drill bush (94) of the drill pipe (91) has an external diameter (98), which is slightly smaller than diameter D (51).

Claim 174 (Previously Presented): Method according to claim 173, wherein the drill guiding hole (95) is aligned obliquely relative to a longitudinal middle axis (96) of the drill bush (94).

Claim 175 (Previously Presented): Method according to claim 173, wherein an axis (97) of the drill guiding hole (95) and the longitudinal middle axis (96) of the drill bush (94) enclose an angle of inclination (79), which is selected from a range of between 0° and 5°.

Claim 176 (Previously Presented): Method according to claim 175, wherein the angle of inclination (79) between the axis of the drill guiding hole (5) and the longitudinal middle axis (96)

of the drill bush (94) is selected from a range of between 0.5° and 1.5°.

Claim 177 (Previously Presented): Method according to claim 163, wherein at least a partial flow of the drill fluid (9) is directed in a discharge direction against a lateral interior wall of the borehole (2).

Claim 178 (Previously Presented): Method according to claim 163, wherein the pressure of the drill fluid (9) is changed according to the calculated time characteristic.

Claim 179 (Previously Presented): Method according to claim 163, wherein the change in pressure is carried out by controlling a valve (26) that reduces the pressure.

Claim 180 (Previously Presented): Method according to claim 179, wherein a servovalve is used for the valve (26).

Claim 181 (Previously Presented): Method according to claim 163, wherein to supply the drill fluid (9) to the drill (4) lines (106) are used that are highly resistant to radial and longitudinal extension or have a high elasticity module.

Claim 182 (Previously Presented): Method according to claim 163, wherein the pressure used is in the region of at least 60 bar.

Claim 183 (Previously Presented): Method according to claim 183, wherein the pressure used is in the region of at least 160 bar.

Claim 184 (Previously Presented): Method according to claim 183, wherein the pressure used is in the region of at least 300 bar.

Claim 185 (Previously Presented): Method according to claim 184, wherein the pressure used is in the region of at least 600 bar.

Claim 186 (Previously Presented): Method according to claim 185, wherein the pressure used is in the region of at least 4,000 bar.

Claim 187 (Previously Presented): Method according to claim 163, wherein the drill fluid (9) used has a viscosity at 40° C of in the region of a maximum of 30 mm^2/s.

Claim 188 (Previously Presented): Method according to claim 197, wherein the drill fluid (9) used has a viscosity at 40°C of in the region of a maximum of 22 mm^2/s.

Claim 189 (Previously Presented): Method according to claim 163, wherein the drill head (5) of the drill (4) includes an element (110) emitting electromagnetic radiation.

Claim 190 (Previously Presented): Method for drilling deep boreholes in workpieces (3) with a drill (4) with a drill head (5) in the shape of a single lip drill and with a lateral, V-shaped chip removing groove or bead (59) and with a channel (12) with an outlet opening (56) in the drill head (5) for supplying a drill fluid (9), wherein with the drill head (5) on a drill side (61) of the drill head (5) facing away from the bead (59) between a first and a second cylinder casing part surface (64, 65) of the drill head (5) a rear offset (63) is formed reducing the cross section of the drill head (5) in relation to an enclosing cylinder casing surface (62) of the drill head (5), and on the

drill head (5) a radial force (19) is exerted acting periodically over a predeterminable rotational angular area, whereby the radial force (19) is generated by a piezoelectric element (105) arranged in the rear offset (63).

Claim 191 (New): Drill (4) with a drill head (5) with a diameter D (51), in which the drill head (5) on a drill tip (13) has only one cutting edge (52) extending over part of the diameter D (51), and with a lateral, V-shaped chip removing groove or bead (59) and with a channel (12) with an outlet opening (56) in the drill head (5) for supplying a drill fluid (9), wherein on a drill side (61) of the drill head (5) facing away from the bead (59) between a first and a second cylinder casing part surface (64, 65) of the drill head (5) there is a rear offset (63) reducing the cross section of the drill head (5) relative to an enclosing cylinder casing surface (62) of the drill head (5), whereby the rear offset (63) is designed to have an at least approximately even surface and is arranged in an end section (74) of the drill head (5) facing the drill tip (13), and extends in axial direction, and whereby a normal to the surface (67) of the rear offset (63) with an angle halving end (68) of the bead (59) encloses an angle (69), whereby said angle (69) has a value from a range of - 50° to +50°, wherein the cutting edge

(52) has a first cutting edge section (53) and a second cutting edge section (54), whereby the first cutting edge section (53) faces a drill axis (27) of the drill head (5) and the second cutting edge section (54) faces away from the drill axis (27) of the drill head (5), and the first cutting edge section (53) with the drill axis (27) encloses a first cutting edge angle (71) of at least 70°, wherein the end region (74) of the second cutting edge section (54) facing away from the drill axis (27) of the drill head (5) or the cutting edge tip (55) is designed to be rounded towards the enclosing cylinder casing surface (62) of the drill head (5).

Claim 192 (New): Drill according to claim 191, wherein the end region (74) of the second cutting edge section (54) facing away from the cutting edge tip (55) has a radius of curvature (75) of up to ½ the diameter D (51).

Claim 193 (New): Drill (4) with a drill head (5) with a diameter D (51), in which the drill head (5) on a drill tip (13) has only one cutting edge (52) extending over part of the diameter D (51), and with a lateral, V-shaped chip removing groove or bead (59) and with a channel (12) with an outlet opening (56) in the drill head (5) for supplying a drill fluid

(9), wherein on a drill side (61) of the drill head (5) facing away from the bead (59) between a first and a second cylinder casing part surface (64, 65) of the drill head (5) there is a rear offset (63) reducing the cross section of the drill head (5) relative to an enclosing cylinder casing surface (62) of the drill head (5), whereby the rear offset (63) is designed to have an at least approximately even surface and is arranged in an end section (74) of the drill head (5) facing the drill tip (13), and extends in axial direction, and whereby a normal to the surface (67) of the rear offset (63) with an angle halving end (68) of the bead (59) encloses an angle (69), whereby said angle (69) has a value from a range of - 50° to +50°, wherein on the drill side (61) of the drill head (5) facing away from the bead (59) or in the rear offset (63) a piezoelectric element (105) is arranged.

Claim 194 (New): Device (1) for drilling a borehole (2) in a workpiece (3) with a diameter D (51) of a drill (4) and a depth (35) of the borehole (2), whereby the ratio of the depth (35) to the diameter D (51) is greater than 100, with a drill spindle (7) and with a drill (4) comprising a drill head (5), a drill shaft (6) and a channel (12) for supplying a drill fluid (9) and with a drill fluid circuit (8) for the drill fluid (9), whereby the drill fluid circuit (8) comprises at least one pump (11) and a

supply line (18) and with a rotary transfer (17) on the drill spindle (7) for supplying the drill fluid (9) into the channel (12) of the drill (4), wherein the drill head (5) on a drill tip (13) has only one cutting edge (52) extending over part of the diameter D (51), wherein the drill (4) has a lateral, V-shaped chip removing groove or bead (59), wherein the channel (12) has an outlet opening (56) in the drill head (5) for supplying the drill fluid (9), wherein on a drill side (61) of the drill head (5) facing away from the bead (59) between a first and a second cylinder casing part surface (64, 65) of the drill head (5) there is a rear offset (63) reducing the cross section of the drill head (5) relative to an enclosing cylinder casing surface (62) of the drill head (5), whereby the rear offset (63) is designed to have an at least approximately even surface and is arranged in an end section (74) of the drill head (5) facing the drill tip (13), and extends in axial direction, and whereby a normal to the surface (67) of the rear offset (63) with an angle halving end (68) of the bead (59) encloses an angle (69), whereby said angle (69) has a value from a range of - 50° to +50°, wherein the drill head (5) is designed to have a cutting edge (52) with a first cutting edge section (53) and with a second cutting edge section (54), whereby the first cutting edge section (53) faces a drill axis (27) of the drill head (5) and the second cutting edge

section (54) faces away from the drill axis (27) of the drill head (5), and the first cutting edge section (53) with the drill axis (27) encloses a first cutting edge angle (71) of at least 70°, wherein an end region (74) of the second cutting edge section (54) facing away from the drill axis (27) of the drill head (5) or the cutting edge tip (55) is designed to be rounded towards the enclosing cylinder casing surface (62) of the drill head (5).